

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS EXAMPLE

CLAIMS

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[Claim(s)]

[Claim 1] The negative for lithography characterized by having the layer which contains a photopolymerization nature lipophilic property thermoplasticity monomer / prepolymer, and a photopolymerization initiator on a substrate, and a layer containing a hydrophilic binder in this order, and containing a light-and-heat conversion agent.

[Claim 2] The negative for lithography characterized by containing a hydrophilic self-film formation nature filler and a photopolymerization nature lipophilic property thermoplasticity monomer / prepolymer, a photopolymerization initiator, and a light-and-heat conversion agent on a substrate.

[Claim 3] The platemaking method of the lithography version characterized by exposing completely with activity light and increasing the molecular weight of the aforementioned photopolymerization nature lipophilic property thermoplasticity monomer / prepolymer with the high illuminance light which has the wavelength which the aforementioned light-and-heat conversion agent absorbs after carrying out picture exposure of the negative for lithography according to claim 1 or 2.

[Translation done.]

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2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

EXAMPLE

[Example] this invention is not limited by these examples although an example explains this invention concretely below. In addition, the following "section" shows the "weight section."

[0093] It stirred, where the composition below manufacture of an example 1 photopolymerization nature thermoplasticity lipophilic property particle is heated at 80 degrees C, and it was made to dissolve mutually. Photopolymerization nature monomer (product made from NK ester 23G:new Nakamura chemistry) 15.0g Photopolymerization initiator (diisopropyl thioxan ton) 3.0g Sensitizer (dimethyl isoamyl benzoate) 2.0g Thermal polymerization inhibitor (hydroquinone) 0.015g Infrared-absorption coloring matter (CY-10:Nippon Kayaku make) While looking the melt of the 5.0g above like [ the inside in the state where the following activator content water was made to stir by 10000rpm with a homogenizer ] and adding the speed for two cc/. It distributed.

[0094] Ion exchange water 40.0g Emulgen 935 The mean particle diameter of the resin particle obtained 1.0g was 2.3micro.

[0095] It applied on the PET film to which gelatin undercoating processing was performed so that it might become 5 micrometers of thickness about the application liquid of composition below production of the negative for lithography, and the photopolymerization nature lipophilic-ized layer was formed. In

addition, the following numeric values show the weight section, respectively.

[0096]

Record layer The above-mentioned distributed liquid With a part for solid 50 Polyvinyl alcohol (GL-5:Japan composition) With a part for solid The hydrophilic layer of the following composition besides [ 10 hydrophilic layer ] was applied so that it might become 1 micrometer of thickness.

[0097]

Colloidal silica (snow tex S:Nissan chemistry) With a part for solid 50 Polyvinyl alcohol (GL-5:Japan composition) With a part for solid 20 Silica particle (Syloid 435) With a part for solid Set in the 30 example

2 example 1. Instead of [ of GL-5 of a record layer ] Colloidal silica (snow tex S:Nissan chemistry) With a part for solid 50 Silica particle (Syloid 435) With a part for solid It applied so that 30 might be added and it might become 8 micrometers of thickness.

[0098] Become 5 micrometers of thickness instead of the photopolymerization nature thermoplasticity lipophilic property particle of a record layer in example 3 example 1 with a photopolymerization nature thermoplasticity lipophilic property melt, without distributing. It applies and is as a hydrophilic layer on it. Colloidal silica (snow tex S:Nissan chemistry) With a part for solid 50 Polyvinyl alcohol (GL-5:Japan composition) With a part for solid 20 Silica particle (Syloid 435) With a part for solid 30 Fluorine system surfactant: (Dainippon Ink : FC-430 make) With a part for solid 1 was applied so that it might become 1.5 micrometers of thickness.

[0099] In example of comparison 1 example 1, the record layer was used as the following application liquid,

and it applied so that it might become 5 micrometers of thickness.

[0100]

polyvinyl alcohol (GL-5:Japan composition) A part for solid 20 Wax emulsion (product made from an A-101:Gifu shellac) A part for solid 50 -- on it, the application liquid same as a hydrophilic layer as an example 1 was applied so that it might become 1 micrometer of thickness

[0101] In example of comparison 2 example 1, the record layer was used as the following application liquid,

and it applied so that it might become 8 micrometers of thickness.

[0102]

Reactant polyvinyl alcohol (Z-100:Japan synthetic-chemistry incorporated company make) With a part for solid 20 Silica particle (Syloid 435) With a part for solid 30 Photopolymerization nature thermoplasticity lipophilic property particle of an example 1 It is a part for solid. 34 Melamine resin (Sumirez Resin 613:Sumitomo Chemical make)

With a part for solid 2, in this case a hydrophilic layer are not prepared.

[0103] The same record layer as example of comparison 3 example 3 was applied, the hydrophilic layer was used as the following application liquid, and it applied so that it might become 1.5 micrometers of thickness.

[0104]

Reactant polyvinyl alcohol (Z-100:Japan synthetic-chemistry incorporated company make) It is a part for solid. 50 Silica particle (Syloid 435) It is a part for solid. 30 Melamine resin (Sumirez Resin 613:Sumitomo Chemical make)

With a part for solid 5 Organic amine salt (Sumirez Accerelator ACX-P:Sumitomo Chemical make) With a part for solid It has the same record layer as the example 2 of example of 1 comparison 4 comparison, and does not have a hydrophilic layer.

[0105] In this way, it recorded by irradiating with exposure energy various by the printer of semiconductor laser loading of the obtained charge of a lithography plate of 830nm and the luminescence wavelength of 500mW of outputs. The laser beam diameter was 20 micrometers in 1 of the intensity in a peak / e2. Moreover, resolution set the scanning direction and the direction of vertical scanning to 1000, 2000, and 4000dpi.

[0106] <Sensitivity> It exposed on the above-mentioned conditions, exposure energy (mJ/cm<sup>2</sup>) required to receive development ink (Fuji Photo Film Co., Ltd. make-I- 2) uniformly in the solid section of the exposure section was searched for, and this exposure energy value estimated.

[0107] <Resolution> It exposed on the above-mentioned conditions, and exposure energy (mJ/cm<sup>2</sup>) required to receive development ink (Fuji Photo Film Co., Ltd. make-I- 2) uniformly in the solid section of

the exposure section was searched for, and it exposed with this exposure energy value, and observed with the 100 times as many magnifier as this, and viewing estimated in quest of the range of the resolution currently reproduced good (line/inch).

[0108] <\*\*\*\*-proof> It exposes on the above-mentioned conditions, and the solid section receives ink uniformly and is printed. The exposure energy value needed is calculated, it exposes with this exposure energy value, and the picture of 175 lines is produced. with a printing machine (HAIDERU GTO) It prints using coat paper, printing ink (TOYO INK MFG. [ CO., LTD. ] CO., LTD. make : high plus M red), and dampening water (Konica [ Corp. ] Corp. make : SEU-3 2.5% solution). Printing was continued until poor impression appeared in the solid section of the picture of printed matter or ink impressed on the non-streak section, the printing number of sheets at that time was counted, and \*\*\*\*-proof was evaluated with this number of sheets.

[0109] <Printing dirt> In evaluation of the above-mentioned \*\*\*\*-proof, the number of sheets which wrings water from the usual water-ink balance gradually, and dirt began to generate on the occasion of printing estimated.

[0110] <Fingerprint dirt> It is a finger to the non-exposing section of the exposed lithography version negative. After pushing and making a fingerprint adhere, using ink (highness plus [ by TOYO INK MFG. CO., LTD. ] M red), and dampening water (etching-solution SG[ by Tokyo Printing Ink Mfg. Co., Ltd. ]-51), it printed to coat paper with the printing machine (HAIDERU GTO), and the following indexes estimated the remains of a fingerprint resulting from the ink attached to the fingerprint section on a version having imprinted on paper through the blanket.

[0111] O : the remains of x:fingerprint where the remains of a fingerprint are accepted partially cover the lithography version negative of which remains[ of a fingerprint ]-less \*\*:<blanket dirt> exposure accepted in a perfect form was done over a printing machine (HAIDERU GTO), and use coat paper, dampening water (1.5% of etching-solution SG[ by Tokyo Printing Ink Mfg. Co., Ltd. ]-51 concentration), and ink (highness plus [ by TOYO INK MFG. CO., LTD. ] M red). It exfoliated using the Scotch tape, the ink dirt on the blanket after printing and printing 5000 sheets (part corresponding to the non-picture section in a version top) was stuck on the blank paper, and comparison and good/poor evaluation were visually performed for the grade of dirt.

[0112] O : -- \*\*: hardly observed -- x: observed partially -- a generating result is extensively shown in Table 1

[0113]

[Table 1]

[0114] It turns out that it is the negative for lithography which the sample of this invention can be engraved by no processing from Table 1, it excels in the print durability of the picture section, there is no dirt in the non-picture section, a pressure mark is suppressed, and neither the remains dirt of a fingerprint nor blanket dirt can generate easily.

[0115]

[Translation done.]